Webservice-energy.org

GEO Community Portal & Spatial Data Infrastructure for Energy

Lionel Menard / Oct. 23 2017

Centre Observation, Impacts, Energy

- **Research activities:**
- Use of **Earth observation** data (Models, satellite, *in-situ*)
- To assess **renewable energy resources** (Solar, wind, marine)
- To assess **environmental impacts** of energy systems
- Expertise in computer sciences
  - Data **acquisition and processing** (Eumetsat/Meteosat)
  - Data **dissemination** (Standards, interoperability)

Webservice-Energy
GEO Energy Community Portal
Spatial Data Infrastructure

GEOSS

Where does GEOSS data and information come from?

The GEOSS Common Infrastructure (GCI) presently brokers more than 165 generally public autonomous data catalogs and information systems, **comprising over 400 million data and information resources.**

Webservice-Energy Community Portal & SDI

- Operational since **2008** as a contribution from **MINES ParisTech**

- Gather, promote and spread **Earth observation data for Energy**

- Benefits from former **GEO Energy efforts** (Community of Practice, AIP's)

- Support **Energy & Mineral Resources Management** SBA

- Support **GEO VENER** (GEO Vision for ENERgy) initiative

- Participate in **GEOSS EVOLVE** (WP6: Community Portals) initiative

- **"GEOSS Facilitator"** (We operate for the Energy community)

- Network of **20 resource providers** (Research, Gov. Ag., NGO, Industries, Companies, SMEs)

GEO GROUP ON EARTH OBSERVATIONS

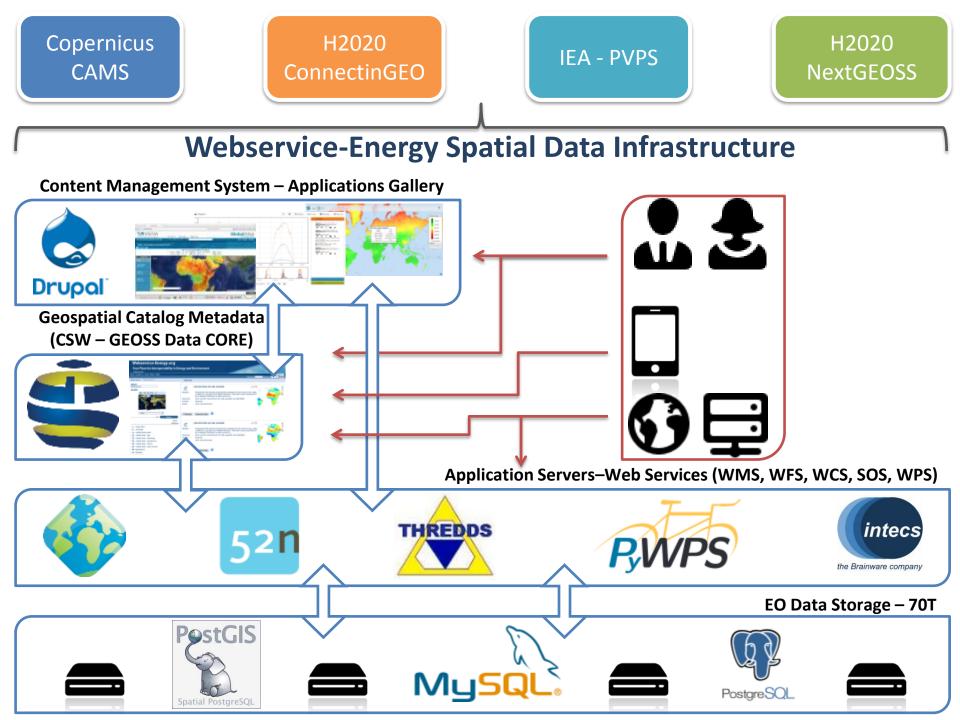# SDI: Enables partnerships (Int. & Nat.)

Webservice-Energy SDI

- **Open Source** – Platforms, tools and application

- **Standards** - **OGC** (Open Geospatial Consortium), **ISO** (International Standard Organization) **INSPIRE** (European directive)

- **Interoperable** – Web Service based access

- **80 end-points** harvested by our Catalog

- Over **1600 resources** accessible as Web Services

- **Link to GCI** through our **OGC/CSW Catalog**

    - **Weekly harvested** by the **DAB** -> GEO Web Portal

    - **Daily monitored** by the **FGCD** Service Status Checker

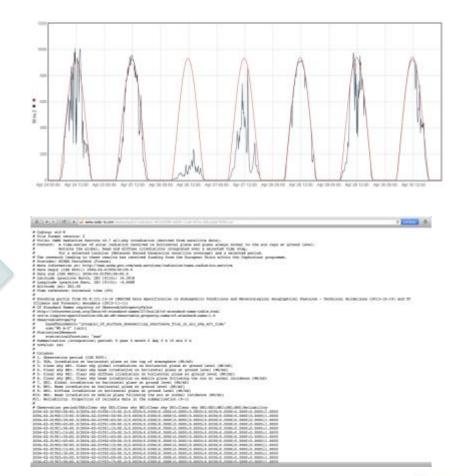- Application schema, tutorials and a gallery of applications

Copernicus CAMS

H2020 ConnectinGEO

IEA - PVPS

H2020 NextGEOSS

Webservice-Energy Spatial Data Infrastructure

Content Management System – Applications Gallery

Geospatial Catalog Metadata
(CSW – GEOSS Data CORE)

Application Servers–Web Services (WMS, WFS, WCS, SOS, WPS)

THREDDS

PyWPS

intecs
the Brainware company

EO Data Storage – 70T

PostGIS
Spatial PostgreSQL

MySQL

PostgreSQL

Support to key projects

Copernicus CAMS

Host **WPS** and **Metadata** to discover and access single point time series from **CAMS McClear** and **CAMS Radiation Services**
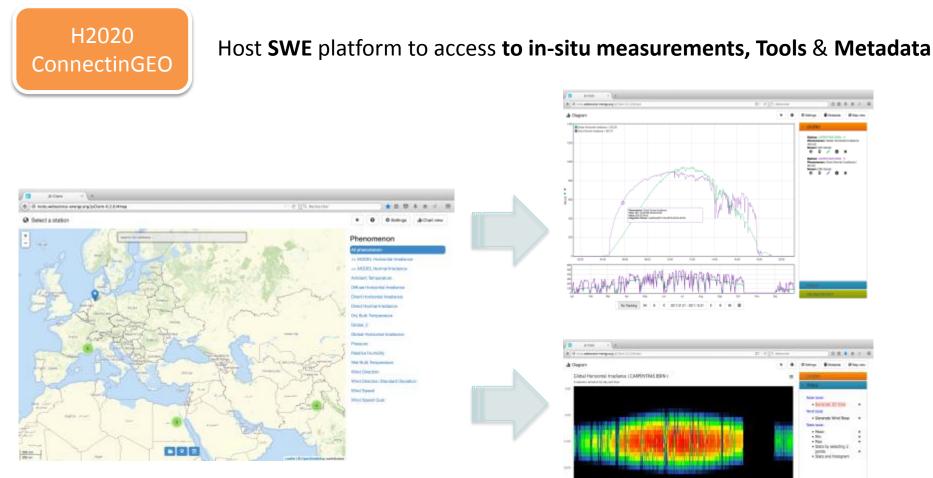

WPS

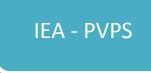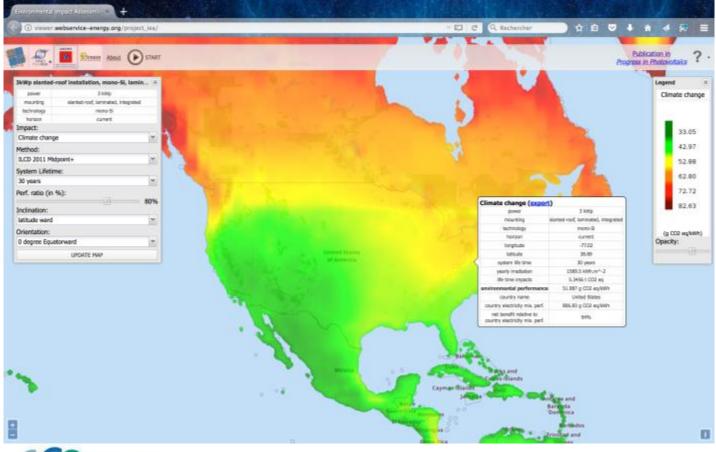CAMS Radiation Service
WPS based request on WebGIS client

Support to key projects

H2020 ConnectinGEO

Host **SWE** platform to access **to in-situ measurements, Tools** & **Metadata**

Support to key projects

International Energy Agency
Photovoltaic Power Systems Programme

IEA - PVPS

Host **Web-Client** and **WPS** to **assess** the current and prospective (2050) **environmental performance of the production, transportation and use of photovoltaic systems**. **Maps** of PV environmental performances are provided for a **worldwide** coverage
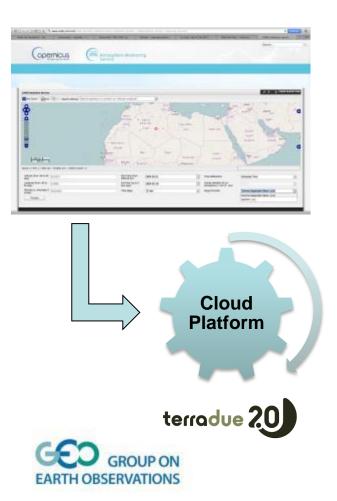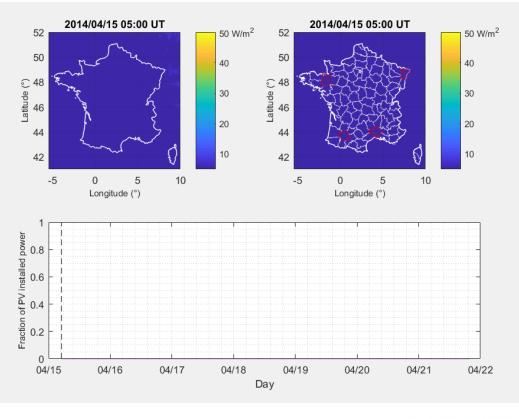
GROUP ON EARTH OBSERVATIONS

Support to key projects

H2020 Project NextGEOSS

Constructing gridded data for grid operators - Target user: EDF R&D **edf**
Process Copernicus Atmosphere Monitoring Service (**CAMS**) services
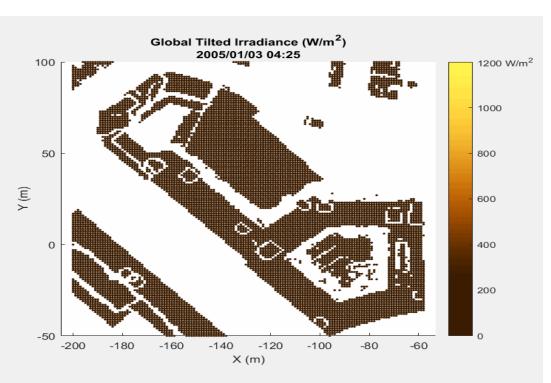**to provide on-the-fly time series of gridded data**

Cloud Platform

terradue 2.0

Support to key projects

High resolution solar mapping at urban scale - Target user: Assess **rooftop potential** and **economic analysis** via **on-the-fly rendering** of **patches of time series** of global tilted irradiation including local horizon (CAMS + DTM (30m) + DSM (10cm)

Cloud Platform

SDI: Lesson learned

- **Benefits** from **GEO**:
    - GEOSS **best practices** & **recommendation** on interoperability
    - Use of **standards** (OGC Members)
    - "**GEO branding**": Ease data providers engagement

- **Virtuous circle**
    - Partnerships -> Successful projects -> **GEO committed resources**

- **"GEOSS Facilitator"** : Deal with various licenses, IPR and DMP (GEOSS Data CORE, INSPIRE, IRENA)

Recent and planned activities

- Extend **free access** to SoDa (Solar Radiation) pay service **up to 3 years (2004-2006)** at 15 mn. time span

- Capacity to **generate DOI** (Datacite) and HTML **landing page** based on **harvest of GeoNetwork** metadata records (IFREMER tool)

- Release a **QGIS plugin** to retrieves observations data from **OGC SOS** https://plugins.qgis.org/plugins/sos-2-0-client/

- H2020 **NextGEOSS** project (2017-2021):
  - Develop **2 solar energy pilots** on **Cloud infrastructure** (PaS, SaS)
  - Experiment **CKAN harvest** on our **GeoNetwork** catalog

Thank You

Communicate and Collaborate with GEO:

GEO
GROUP ON
EARTH OBSERVATIONS